

CLAIM AMENDMENTS

Claim 19 is amended herein. Claims 1, 6, 8, 9 and 16 were amended in the previous Amendment. Claims 5 and 13-15 were cancelled in the previous Amendment.

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Once Amended) A housing comprising:

an optically transparent volume having a first refractive index;

an optical entry point defined on the surface of the optically transparent volume;

an optical transit point defined within the optically transparent volume; and

a first pocket formed in the optically transparent volume;

wherein the first pocket defines a first three-dimensional negative object within the

optically transparent volume having a second refractive index substantially less than the first refractive index;

wherein the first pocket is substantially encased by the optically transparent volume; and

wherein the first pocket is shaped to reflect a beam of light passing through the optical

entry point and incident upon the first pocket to the optical transit point; and

wherein the first pocket encloses a partial vacuum.

2. (Original) The housing of claim 1 wherein the first pocket is filled with a gas.

3. (Original) The housing of claim 2 wherein the gas is air.

4. (Original) The housing of claim 1 wherein the refractive index of the first pocket is substantially unity.
5. (Canceled) The housing of claim 1 wherein the first pocket encloses a partial vacuum.
6. (Once Amended) A housing comprising:
 - an optically transparent volume having a first refractive index;
 - an optical entry point defined on the surface of the optically transparent volume;
 - an optical transit point defined within the optically transparent volume; and
 - a first pocket formed in the optically transparent volume;
 - a second pocket formed in the optically transparent volume; and
 - an optical exit point defined within the optically transparent volume;wherein the first pocket defines a first three-dimensional negative object within the
optically transparent volume having a second refractive index substantially less
than the first refractive index;
wherein the first pocket is substantially encased by the optically transparent volume;
wherein the first pocket is shaped to reflect a beam of light passing through the optical
entry point and incident upon the first pocket to the optical transit point; and
wherein the second pocket defines a second three-dimensional negative object within
the optically transparent volume having a third refractive index substantially
less than the first refractive index;
wherein the second pocket is substantially encapsulated by the optically transparent
volume; and

wherein the second pockets is shaped to totally internally reflect a beam of light from the first pocket passing through the optical transit point and incident upon the second pocket to the optical exit point.

7. (Original) The housing of claim 6 wherein the first and second pockets are filled with air.
8. (Once amended) The housing of claim 6 wherein the second and third refractive indices are substantially unity.
9. (Once amended) A housing comprising:
 - an optically transparent volume having a first refractive index;
 - an optical entry point defined on the surface of the optically transparent volume;
 - an optical transit point defined within the optically transparent volume; and
 - a first pocket formed in the optically transparent volume;
 - a second pocket formed in the optically transparent volume; and
 - an optical exit point defined within the optically transparent volume;
 - a hollow recess positioned between the optical transit point and the optical exit point;
 - wherein the first pocket defines a first three-dimensional negative object within the optically transparent volume having a second refractive index substantially less than the first refractive index;
 - wherein the first pocket is substantially encased by the optically transparent volume;
 - wherein the first pocket is shaped to reflect a beam of light passing through the optical entry point and incident upon the first pocket to the optical transit point; and

wherein the second pocket defines a second three-dimensional negative object within the optically transparent volume having a third refractive index substantially less than the first refractive index;

wherein the second pocket is substantially encapsulated by the optically transparent volume; and

wherein the second pockets is shaped to reflect a beam of light from the first pocket passing through the optical transit point and incident upon the second pocket to the optical exit point.

10. (Original) The housing of claim 9 further comprising an optical device and wherein at least a portion of the optical device is positioned within the hollow recess.

11. (Original) The housing of claim 10 wherein the optical device is a rotary encoder.

12. (Original) The housing of claim 10 wherein the optical device is part of an automotive clockspring.

13. (Canceled) A combination, comprising:

a substantially solid transparent body having a first refractive index;

a first cavity formed within the substantially solid transparent body; and

a first optical medium substantially filling the first cavity;

wherein the first optical medium is having a second refractive index substantially

less than the first refractive index; and

wherein the first cavity is adapted to redirect incident light shining through
the substantially solid transparent body through a first predetermined angle.

14. (Canceled) The combination of claim 13 further comprising a light source positioned to
shine a beam of light through the substantially solid transparent body to the first cavity.

15. (Canceled) The combination of claim 13 further comprising a second cavity formed
within the substantially solid transparent body; and
a second optical medium substantially filling the second cavity;
wherein the second optical medium has a third refractive index substantially less than
the first refractive index; and
wherein the second cavity is adapted to redirect incident light shining from the first
cavity through the substantially solid transparent body through a second
predetermined angle.

16. (Once amended) A combination, comprising:
a substantially solid transparent body having a first refractive index;
a first cavity formed within the substantially solid transparent body; and
a second cavity formed within the substantially solid transparent body
a first optical medium substantially filling the first cavity;
a second optical medium substantially filling the second cavity;
a light source positioned to shine a beam of light through the substantially solid
transparent body to the first cavity; and

a recess formed in the substantially solid transparent body;
wherein the first optical medium is having a second refractive index substantially less than the first refractive index; and
wherein the first cavity is adapted to redirect incident light shining through the substantially solid transparent body through a first predetermined angle; and
wherein the second optical medium has a third refractive index substantially less than the first refractive index; and
wherein the recess is positioned such that light redirected from the second cavity shines through the recess.

17. (Original) The combination of claim 16 further comprising an optical device positioned in the recess.

18. (Original) The combination of claim 17 wherein the optical device includes an encoder wheel adapted to periodically transmit a light beam therethrough and a photodetector positioned to detect the periodic transmission of a light beam through the encoder wheel.

19. (Currently amended) A light pipe, comprising:

a transparent member having a first refractive index;
a light source positioned to shine a light beam through the transparent member; and
at least a first and second enclosed pockets positioned within the transparent member;
wherein the first and second enclosed pockets have a second and third refractive indices, respectively;

wherein the first refractive index is substantially greater than the second refractive index and third refractive index; and

wherein light shining through the transparent member is totally internally reflected by the first pocket directly to the [and] second enclosed pocket[s].